Please cancel claims 1 through 68 without any disclaimer and a prejudice to and add the following new claims.

69. A method for manufacturing a liquid crystal display device, comprising:

applying a liquid containing a pre-polymeric material to spacers, the liquid being in a liquid state upon introduction of the spacer to at least one of a first substrate and a second substrate, the spacers being distributed generally randomly along an inner surface of at least one of the first substrate and the second substrate, wherein the first substrate and the second substrate are made of a flexible polymer material;

depositing a material with optical properties onto an inner surface of at least one of the first substrate and an inner surface of the second substrate;

laminating together the first substrate and the second substrate to form a cell; and

prior to depositing the material with optical properties, polymerizing the pre-polymeric material in situ to form solid polymeric material occupying at least a portion of the cell such that at least a portion, wherein at least a portion of the solid polymeric material is in direct contact with the inner surface of the first substrate and the inner surface of the second substrate.

70. The method of claim 69, wherein further comprising diluting the liquid containing the pre-polymeric material in a solvent at a ratio sufficient to obtain a viscosity of about 50 cps.

71. The method of claim 69, wherein the step of applying a pre-polymeric material to spacers comprises mixing spacers into the pre-polymeric solution in a concentration of about 1:2 wt/wt to form a pre-polymer/spacer mixture.

72. The method of claim 71, wherein the step of mixing comprises mixing the spacers in the pre-polymer solution via ultrasonic mixing.

73. The method of claim 71, wherein the step of applying comprises spraying the pre-polymer/spacer mixture onto at one of the inner surface of the first substrate and the inner surface of the second substrate.

74. The method of claim 73, wherein the pre-polymer/spacer mixture is sprayed such that a surface density of the spacers is about 30 spacers/mm^2.

75. The method of claim 74, wherein the step of applying comprises using micro-filtered compressed nitrogen at approximately 10-30 psi is used as a propellant to spray the pre-polymer/spacer mixture onto at one of the inner surface of the first substrate and the inner surface of the second substrate.

76. The method of claim 75, further comprising adjusting at least one of pressure, viscosity of the pre-polymer/spacer mixture, relative concentrations of spacers and pre-polymeric material and nozzle orifice shape to achieve a pre-polymer coating individual spacers.

77. The method of claim 76, wherein either or both of the first substrate and the second substrate with the pre-polymer/spacer mixture is exposed to heat to remove solvents from the pre-polymer/spacer mixture.

78. The method of claim 77, further comprising curing the pre-polymer/spacer mixture.

79. The method of claim 76, wherein at least a portion of the spacers extend a distance between the inner surface of the first substrate and the inner surface of the second substrate.

80. The method of claim 69, further comprising coating, with a vapor barrier, an outside surface of the first substrate and an outside surface of the second substrate.

81. The method of claim 80, further comprising coating a layer of a transparent conductor on the first substrate and the second substrate, wherein the transparent conductor is patterned via at least one of chemical beam etching, electron beam etching and laser etching.

82. The method of claim 81, further comprising:

coating, with a polyimide solution, at least one of the first substrate and the second substrate coated with the transparent conductor; and

baking at least one of the first substrate and the second substrate to form a polyimide surface on thereon.

83. The method of claim 82, wherein the step of baking comprises baking the first substrate and the second substrate are baked for about one hour at a temperature of about 150°C.

84. The method of claim 82, further comprising rubbing the polyimide surface to develop an alignment layer for the liquid crystal cell.

85. The method of claim 69, further comprising surface etching glass spacers to create the spacers having polymerization initiating and/or enhancing (PIE) material on or therein.

86. The method of claim 85, wherein the step of surface etching glass spacers comprises surface etching glass spacers having a diameter of about 3 to about 3.5 μm.

87. The method of claim 85, wherein the step of surface etching comprises using about a 1.25% solution of hydrofluoric acid for about 10 minutes while suspended in a solution in an ultrasonic vibration tank.

88. The method of claim 85, further comprising coating, after washing, the etched spacers with a mixture of an adhesion promoter and at least one of the photoinitiator and the accelerator lacquer initiator by immersing the etched spacers into a solution containing the adhesion promoter and at least one of the photoinitiator, the accelerator initiator and an accelerant.

89. The method claim 88, wherein the adhesion promoter is a silane.

90. The method of claim 89, wherein the adhesion promoter is methacrylate silane.

91. The method of claim 90, wherein the accelerant is a tertiary amine.

92. The method of claim 91, wherein the tertiary amine is dimethyl amino benzene.

93. The method of claim 69, wherein the spacers comprise porous plastic and the PIE material is absorbed into the pores of the plastic.

94. The method of claim 69, wherein the spacers comprise high-surface area particles that are nanporous, mesoporous, or microporous.

95. The method of claim 69, wherein the solid polymeric material is at least one of an acrylic adhesive, epoxies and urethanes.

96. The method of claim 69, wherein the in solid polymeric material is an acrylic adhesive.

97. The method of claim 69, wherein the step of depositing a liquid crystal and pre-polymer mixture comprises depositing a liquid crystal and pre-polymer mixture comprising of about 10% photoinitiator and/or accelerator lacquer initiator pre-polymer and about 90% liquid crystal material.

98. The method of claim 69, wherein the flexible polymer material of the first substrate and the second substrate is polyethersulphone.

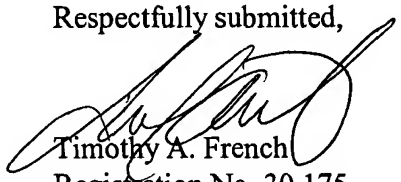
99. The method of claim 69, wherein the substrate has a glass transition temperature greater than 150°C.

100. The method of claim 69, wherein the step of laminating together the first substrate and the second substrate to form a liquid crystal cell is performed at about room temperature.

Conclusion

It is respectfully requested that this amendment be entered prior to the examination of the above-referenced patent application. It is believed that no new matter is added by this amendment. By this amendment, claims 69-100 are now pending, among which claim 69 is an independent claim. If the Examiner desires any additional information, the Examiner is invited to contact Applicants' attorney at the telephone number listed below to expedite prosecution.

Respectfully submitted,



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